No. 200100125

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Virginia Tech Intellectual Properties, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN DUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY ECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF T (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Sisson'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twelfth day of September, in the year two thousand one.

Attest:

Paul M. Zurbrick

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

...tary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
Virginia Tech Intellectual Properties, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
VA96W-250

3. VARIETY NAME
SISSON

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
Virginia Tech Intellectual Properties, Inc.
1872 Pratt Dr., Ste.1625
Blacksburg, VA 24060

5. TELEPHONE *(Include area code)*
540-951-9378

6. FAX *(Include area code)*
540-951-5252

FOR OFFICIAL USE ONLY

PVPO NUMBER 200100125

FILING DATE
3-9-2001

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
Virginia

9. DATE OF INCORPORATION
June 20, 1985

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE (S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*

Carl A. Griffey
Crop and Soil Environmental Sciences
Virginia Tech
Blacksburg, VA 24061-0404

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 2450.00 + 255.00
DATE 3/9/01 + 4/2/01

CERTIFICATION FEE:
$ 320.00
DATE 7/26/01

11. TELEPHONE *(Include area code)*
540-231-9789

12. FAX *(Include area code)*
540-231-3431

13. E-MAIL
Cgriffey@vt.edu

14. CROP KIND *(Common Name)*
Wheat, Common

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

- a. ☑ Exhibit A. Origin and Breeding History of the Variety
- b. ☑ Exhibit B. Statement of Distinctness
- c. ☑ Exhibit C. Objective Description of Variety
- d. ☑ Exhibit D. Additional Description of the Variety *(Optional)*
- e. ☑ Exhibit E. Statement of the Basis of the Owner's Ownership
- f. ☑ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
- g. ☑ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*
☑ YES *(If "yes", answer items 20 and 21 below)* ☐ NO *(If "no," go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? ☑ YES ☐ NO
IF YES, WHICH CLASSES? ☑ FOUNDATION ☐ REGISTERED ☑ CERTIFIED

21. DOES THE OWNER SPECIFY THAT THE CLASSES BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☑ NO
IF YES, SPECIFY THE NUMBER 1, 2, 3, etc. ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☐ YES ☑ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☑ NO
IF YES, GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER	SIGNATURE OF OWNER
NAME *(Please print or type)* Michael J. Martin	NAME *(Please print or type)*
CAPACITY OR TITLE Executive Vice President	DATE 3/9/01
CAPACITY OR TITLE	DATE

INSTRUCTIONS

200100125

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $2,450 ($300 filing fee and $2,150 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $300 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvp.htm

ITEM

18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

19. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

21. *See Section 83 of the Act for the Contents and Term of Plant Variety Protection.*

22. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

23. *See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.*

21. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

22. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

23. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center--East, Beltsville, MD 20705. Telephone: (301) 504-8089.

18A. Exhibit A: Origin and Breeding History

Genealogy and Breeding Method. Sisson wheat, formerly designated VA96W-250, was derived from the cross 'Coker 9803'/'Freedom'. The cross was made in spring1990, and the F_1 generation was grown in the field as a single 4ft headrow in 1991 to produce F_2 seed. The population was advanced from the F_2 to F_4 generation using a modified bulk breeding method.

Population Advancement and Selection of the Variety. Wheat spikes were selected from the population in each segregating generation (F_2-F_3) on the basis of absence of obvious disease, early maturity, short straw and desirable head shape and size. Selected spikes were threshed in bulk, and the seed was planted in a 225ft^2 block in the fall of each year. Spikes selected from the F_4 bulk were threshed individually and planted in separate 4ft headrows. The wheat line VA96W-250 was derived as a bulk of one of these F_5 headrows selected in 1995 on the basis of early head emergence, short plant height and resistance to prevalent diseases. The line was tested as entry 250 in non-replicated observation tests in 1996 and was designated VA96W-250. This line was tested in replicated preliminary tests in 1997 and in the Virginia Variety Trials from 1998-2000.

Multiplication and Purification. The initial Breeder seed of Sisson was developed via removal of visual variants from a 0.12 acre F_8 purification block. While Sisson has remained stable and uniform in composition through the last three generations of self pollination, the initial Breeder seed of Sisson contained up to 0.15% taller plants, 0.05% plants with shorter or longer awns, 0.05% plants with lax spikes, and 0.05% plants with purple stem color at ripening. In the fall of 1999, 292 F_{10} headrows of Sisson were planted to develop a purer source of Breeder seed. These rows were evaluated for uniformity and trueness of type several times during the growing season. Of the 292 rows, 63 variant rows were removed, and the remaining rows were harvested in bulk to provide a new source of Breeder seed.

18B. Exhibit B: Novelty Statement

Sisson wheat is uniquely different from all known cultivars, but is most similar to its parent Coker 9803. Based on seedling tests conducted by the USDA-ARS Cereal Disease Lab, St. Paul, MN, Sisson has gene *Lr*26 governing resistance to leaf rust (*Puccinia triticina*), while Coker 9803 has gene *Lr*18. Sisson is susceptible to leaf rust races MCDL (virulence for genes *Lr*1,3, 10, 17, 26) and MCGL (*Lr*1, 3, 10, 11, 26), while Coker 9803 is resistant to these races. Sisson is resistant to races, such as TLGQ (*Lr*1, 2a, 2c, 3, 9, 10, 11, 18), while Coker 9803 is susceptible. Sisson and Coker 9803 differ in reaction to powdery mildew (*Blumeria graminis*) and, therefore, differ for one or more resistance genes. Tests conducted at Virginia Tech indicate that Sisson has gene *Pm*8, which Coker 9803 does not possess. In seedling tests conducted in 1996 and 1998, Sisson was susceptible (score of 3 on a 0=Resistant to 4=Susceptible scale), to mildew isolates with virulence for gene *Pm*8, while Coker 9803 was resistant to moderately resistant (scores of 1-2). At the Booting Stage, flag leaves of Sisson are twisted, while those of Coker 9803 are non-twisted. Sisson has a tapering head shape, while that of Coker 9803 is strap. Glumes of Sisson have obtuse beaks, while those of Coker 9803 are acute.

Sisson also is similar to one of its sister lines released as variety 38247. However, head emergence of Sisson is consistently earlier than that of 38247 and on average Sisson heads 2 days earlier. In tests conducted from 1997-2000, head emergence of Sisson was 1-3 days earlier than variety 38247 with an L.S.D. (0.05) value of 1 day in each test (Tables 1-4). At the Booting Stage, flag leaves of Sisson are erect and twisted, while those of variety 38247 are recurved and non-twisted. Sisson has a tapering head shape, while that of variety 38247 is strap.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Virginia Tech Intellectual Properties, Inc.

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
1872 Pratt Dr., Suite 1625
Blacksburg, VA 24060

FOR OFFICIAL USE ONLY
PVPO NUMBER 200100125

VARIETY NAME OR TEMPORARY DESIGNATION
Sisson

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[2] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____ [1] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____

[2] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:
[ ][ ][ ] FIRST FLOWERING [ ][ ][ ] LAST FLOWERING

4. MATURITY (*50% Flowering*):
[0][1] NO. OF DAYS *EARLIER* THAN ..... [7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 7=Coker9835
[0][1] NO. OF DAYS *LATER* THAN ..... [8] 4 = LEMHI 5 = NUGAINES 6 = LEEDS 8-Pioneer2580

5. PLANT HEIGHT (*From soil level to top of head*):
[0][9.][0] CM. HIGH
[0][2] CM. TALLER THAN ..... [7]
[0][4] CM. SHORTER THAN ..... [8] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Coker9835 8=Pioneer2580

6. PLANT COLOR AT BOOTING (*See reverse*):
[3] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[1] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[0][4] NO. OF NODES (*Originating from node above ground*)
[2][1] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[2] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____
[2] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[0][9] MM. LEAF WIDTH (*First leaf below flag leaf*)
[2][1] CM. LEAF LENGTH (*First leaf below flag leaf*):

FORM LMGS 470-6 (6-82) (Formerly Form LPGS 470-6 (3-79), which may be used)

200100125

11. HEAD:

[3] Density: 1 = LAX 2 = DENSE 3. Mid-dense

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[3] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[2] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[0][9] CM. LENGTH

[1][5] MM. WIDTH

12. GLUMES AT MATURITY:

[3] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[3] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

[2] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[1] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[3] Brush. 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[2] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[0][7] MM. LENGTH

[0][4] MM. WIDTH

[2][9] GM. PER 1000 SEEDS

17. SEED CREASE:

[2] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[2] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[2] STEM RUST (Races) TPMK

[2] LEAF RUST (Races) Has gene Lr26

[1] STRIPE RUST (Races) _____

[0] LOOSE SMUT

[2] POWDERY MILDEW

[0] BUNT

[ ] OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY

[2] APHID (Bydv.)

[0] GREEN BUG

[1] CEREAL LEAF BEETLE

[1] OTHER (Specify) Biotype L Hessian Fly

HESSIAN FLY RACES: [1] GP [0] A [1] B [1] C [1] D [1] E [0] F [0] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering		Seed size	
Leaf size		Seed shape	
Leaf color		Coleoptile elongation	
Leaf carriage		Seedling pigmentation	

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States. Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

Sisson Wheat

18D. Exhibit D: Additional Description of Sisson.

Since Sisson has not been tested in comparison with any of the six cultivars listed in Exhibit C, average data on performance in Virginia from 1997 to 2000 are presented in Tables 1-4. Sisson is a moderate-early heading, high-yielding, short-stature, awnleted, soft red winter wheat with broad adaptation. Head emergence is one day later than Pioneer 2580 and two days earlier than its sister line Variety 38247 (VA96W-247). Plant height of Sisson (34 inches) is similar to that of Coker 9835 and one inch shorter than Variety 38247 (Tables 1-4). Straw strength of Sisson is similar to that of Coker 9835 and better than that of Jackson. Grain yields of Sisson have been similar or exceeded those of the best check cultivars and have averaged 87 bu/ac versus 82 bu/ac for Variety 38247. Average test weight of Sisson (58.1 lb/bu) has been consistently higher than that of Pioneer 2580 (57.1 lb/bu) and Coker 9835 (56.4 lb/bu). Based on limited data, winter-survival (99.5% in Ontario, Canada) of Sisson is moderately good and most similar to its parent Freedom (an Ohio cultivar). Milling and baking quality (Tables 8-10) of Sisson is most similar to that of Jackson and slightly better than that of Variety 38247.

Sisson is similar to its sister line Variety 38247 in response to disease and insect pests, but is relatively more susceptible to leaf rust, and less susceptible to Barley Yellow Dwarf virus (Tables 1-4). Sisson is resistant to moderately resistant to powdery mildew. In the field, Sisson is moderately susceptible to leaf rust, but does express resistance to several predominant races. Sisson is resistant to the predominant race (TPMK) of stem rust. Sisson is moderately resistant to barley yellow dwarf virus and glume blotch. Sisson has been rated as moderately resistant to moderately susceptible to wheat spindle streak mosaic viruses, and is susceptible to Hessian fly.

Table 1. Summary of performance of VA96W-250 in the Virginia Tech Wheat Test, 2000 harvest.*

Brand/Variety	Yield (Bu/A) (7)	Test Weight (Lb) (6)	Date Headed (Mar 31+) (4)	Height (In) (3)	Lodging** (0.2-10) (5)	Powdery Mildew (2)	Leaf Rust (0-9)◇ (2)	Barley Yellow Dwarf (2)
PIONEER 2580	76	56.1 -	28 -	38	0.3 -	0	3	2
JACKSON	74	57.7+	32 +	39	1.7+	1	5 +	2
COKER 9835	70 -	56.2 -	30	35	0.4	1	4	2
FFR 555W	63 -	55.3 -	33 +	38	0.3 -	5	6 +	4 +
VA96-54-326	75	58.2+	29 -	39	0.8	0	4	2
VA96W-247	80 +	57.4+	31 +	37	1.4	0	6 +	2
VA96W-250	82 +	57.7+	29 -	36	1.1	0	7 +	2
VA96W-158	79 +	56.8	26 -	40	0.9	1	2	2
VA96W-270	75	57.5+	28 -	40	0.4	1	6 +	2
Test Average	75	56.9	30	38	1.0	1	3	2
L.S.D. (0.05)	3	0.5	1	—	0.7	1	2	1
C.V.	8	1.5	3	3	102.7	87	49	25

* Varieties are ordered by descending statewide averages. A plus or minus sign indicates a performance significantly above or below the test average. The number in parentheses below column headings indicates the number of locations on which data are based.

** Belgian Lodging Scale = Area X Intensity X 0.2. Area = 1-10, where 1 is wheat unaffected and 10 is entire plot affected and Intensity=1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

◇The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

Table 2. Summary of performance of VA96W-250 in the Virginia Tech Wheat Test, 1999 harvest.*

Brand/Variety	Yield (Bu/A)	Test Weight (Lb)	Date Headed (Mar 31+)	Height (In)	Lodging** (0.2-10)	Powdery Mildew (0-9)♦	Leaf Rust (0-9)♦	Septoria (0-9)♦	Barley Yellow Dwarf (0-9)♦
	(6)	(6)	(3)	(3)	(2)	(2)	(3)	(2)	(2)
PIONEER 2580	77	57.6	33	37	0.7	2	4	3	2
JACKSON	83	59.3	37	40	2.9	3	4	2	2
COKER 9835	78	57.5	35	35	3.0	2	7	2	2
FFR 555W	69	57.7	40	37	0.6	5	5	2	4
VA96-54-326	77	59.3	34	38	1.4	1	3	2	1
VA96W-247	80	58.2	38	35	1.8	1	1	3	3
VA96W-250	84	58.4	36	36	2.6	2	2	2	2
VA96W-158	84	58.3	32	38	1.9	1	4	4	3
VA96W-270	68	57.6	35	38	0.5	1	3	2	1
Average	75	58.1	36	38	1.3	2	3	3	2
LSD (0.05)	4	0.4	1	1	1.0	1	1	1	1

* The number in parentheses below column headings indicates the number of locations on which data are based. A plus or minus sign indicates a performance significantly above or below the test average, respectively.

** Belgian Lodging Scale = Area x Intensity x 0.2. Area = 1-10, where 1 is wheat unaffected and 10 is entire plot affected and Intensity = 1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

♦ The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

Table 3. Summary of performance of VA96W-250 in the Virginia Tech Wheat Test, 1998 harvest.*

Brand/Variety	Yield (Bu/A) (7)	Test Weight (Lb) (7)	Date Headed (Mar 31+) (4)	Height (In) (3)	Lodging✣ (0.2-10) (6)	Powdery Mildew (0-9)❐ (1)	Leaf Rust (0-9) (1)	Head Disease★ (0-9) (1)	Spring Freeze Injury (%) (1)
PIONEER BRAND 2580	76 +	54.7	25 -	38	1.1 -	1 -	6	5	1
JACKSON	73	56.1 +	28 +	38	4.7 +	4 +	6	4 -	2
FFR 555W	73	54.7	29 +	39 +	0.8 -	7 +	8 +	5	1
NK-COKER 9835	69	53.6 -	28 +	35 -	1.8	4 +	6	5	1
VA96-54-326	74 +	56.6 +	25 -	37 -	3.3 +	1 -	8 +	5	3
VA96W-247	80 +	55.6 +	27	37 -	2.8	2 -	4	3 -	1
VA96W-250	80 +	55.8 +	26 -	34 -	3.6 +	1 -	4	4 -	2
NK-COKER 9803	66 -	55.8 +	25 -	35 -	3.9 +	6 +	5	6 +	3
LSD (0.05)	3	0.6	1	1	0.8	1	2	1	6
Test Average	71	54.9	27	38	2.5	3	5	5	5

* Varieties are ordered by descending statewide averages. The number in parentheses below column headings indicates the number or locations on which data are based. A plus or minus sign indicates a performance significantly above or below the test average.

✣ Belgian Lodging Scale = Area X Intensity X 0.2. Area = 1-10, where 1 is wheat is unaffected and 10 is entire plot affected and Intensity=1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

❐ The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

★ This was most likely bacterial pseudomonas although there may have been septoria nodorum present.

Table 8. Milling and baking quality of VA96W-250 wheat: 1998 crop

Entry	Milling quality score		Baking quality score		Adj. flour yield %	Protein %	AWRC %	Softness equiv.
Massey (standard)	100.0	A	100.0	A	73.6	10.1	54.4	55.0
FFR555W-B	101.8	A	100.9	A	74.2	9.1	53.7	54.7
Pioneer 2580-B	94.6	C	98.8	B	72.0**	8.6	55.3	55.2
Jackson	95.8	B	97.3	B	72.3*	9.7	56.7	56.0
Coker 9835-D	96.2	B	100.2	A	72.5*	8.7	57.3*	60.4
Coker 9663	97.1	B	87.7	D	72.7	9.6	57.2	48.7
VA96-54-326	99.8	B	97.1	B	73.6	10.0	55.5	54.1
VA96W-247	94.9	B	94.4	C	72.1*	8.4	57.4*	54.5
VA96W-250	96.9	B	91.8	C	72.7*	9.3	57.0*	51.8*

*Score is one standard deviation away from the standard cultivar's score.
**Score is two standard deviations away from the standard cutlivar's score.

Table 9. Milling and baking quality of VA96W-250 wheat: 1997 crop

Entry	Milling quality score		Baking quality score		Micro T.W. Lb/Bu	Soft equiv.	Flour yield %	Flour prot. %	Micro AWRC %	Cookie diam. cm
Massey (standard)	100.0	A	100.0	A	62.3	52.2	70.3	8.5	57.3	17.6
FFR 555W	104.2	A	98.3	B	61.7	51.4	71.8	8.2	56.3	17.4
Pion 2580	86.9	D	71.3	F	61.6	48.5*	67.8**	7.5	61.3**	16.9**
Jackson	99.6	B	86.7	D	63.3	54.0	69.8	8.0	59.1*	17.1**
CK 9835	104.3	A	98.1	B	62.2	59.5	70.5	7.1	61**	18.1
VA96W-158	102.1	A	96.6	B	62.0	51.3	71.0	7.5	57.2	17.4
VA96W-247	93.9	C	81.7	E	62.9	50.2	69.1*	7.5	61.8**	17.3
VA96W-250	96.4	B	84.9	D	62.6	49.3*	69.9	6.9	61.1**	17.5
VA96W-270	95.0	C	88.2	D	63.0	47.1*	69.9	8.5	58.3	17.4

*Score is one standard deviation away from the standard cultivar's score.
**Score is two standard deviations away from the standard cutlivar's score.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Virginia Tech Intellectual Properties, Inc.	VA96W-250	Sisson

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	5. TELEPHONE *(include area code)*	6. FAX *(include area code)*
1872 Pratt Dr., Suite 1625 Blacksburg, VA 24060	540-951-9374	540-951-5292
	7. PVPO NUMBER 200100125	

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [x] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [x] YES [ ] NO
If no, give name of country

10. Is the applicant the original owner? [ ] YES [x] NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

[ ] YES [ ] NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

[x] YES [ ] NO If no, give name of country

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

Original owner Virginia Polytechnic Institute and State University assigned its ownership to current owner Virginia Tech Intellectual Properties Inc. (see attached)

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

STD-470-E (07-97) *(Destroy previous editions).*
Electronic version designed using WordPerfect InForms by USDA-AMS-IMB.

GROUP ASSIGNMENT

PLANT GERMPLASMS

00.041	V91-3036 Soybean
00.042	VA96-54-226 Wheat
00.043	VA96W-158 Wheat
00.044	VA96W-247 Wheat
00.045	VA96W-250 Wheat
00.046	VA96W-270 Wheat

200100125

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY (hereinafter referred to as the "UNIVERSITY"), assigns to VIRGINIA TECH INTELLECTUAL PROPERTIES, INC. (hereinafter referred to as "VTIP") all rights, title and interest in and to all of the above-listed GERMPLASMS as held by the UNIVERISTY.

The UNIVERSITY, by its authorized agents, agrees that it will execute all necessary assignments as requested by VTIP, to facilitate the filing of patent applications and/or copyright registrations. It will render any reasonable assistance requested to aid in preparation of such applications and/or registrations.

The UNIVERSITY shall retain the right to make use of the GERMPLASMS for internal research and other non-commercial purposes without cost to the UNIVERSITY.

All royalties, rents, payments, or any cash receipts from the sale, assignment, transfer, licensing or use of the GERMPLASMS shall be the property of VTIP and shall be distributed according to the provisions of the Virginia Agricultural Experiment Station (VAES) Plant Germplasm Release Policy (PGRP).

Prior to the execution of this Assignment, the UNIVERSITY has not granted the right of license to make, use, or sell said GERMPLASM to anyone except to VTIP, nor has it otherwise encumbered its rights, title and interest in said GERMPLASM, and it will not execute any instrument in conflict with this Assignment.

IN WITNESS WHEREOF, the UNIVERSITY has caused this Assignment to be signed this 24 day of May, 2000.

VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

BY _____
MINNIS E. RIDENOUR
Executive Vice President

200100125

STATE OF VIRGINIA

COUNTY OF MONTGOMERY, to-wit:

The foregoing instrument was acknowledged before me this 24th day of May, 2000, by Minnis E. Ridenour of Virginia Polytechnic Institute and State University, on behalf of said University.

Gail S. Kreglow
Notary Public

My commission expires: 11/30/02